REMARKS

The Examiner maintains the rejection of claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Lusignan in view of Holcomb (claims 1 and 4), further in view of Ward (claim 2) or further in view of Dick (claim 3) over Applicants' prior remarks. The Examiner states in response that Lusignan's dither signal is added to provide greater accuracy for the measured signal by creating more samples of the signal and this methodology is seen by the Examiner as being functionally equivalent to Applicants' "image alias rejection of a high dimensional rasterized waveform" since antialiasing does in effect provide a more accurate representation of data by eliminating or masking noise or unwanted data and the dither waveform of Lusignan is disclosed as being displayed on an LCD display device, thereby providing the "image . . . waveform" of Applicants' claims. The Examiner further states that Lusignan's "analog" signal is also broadly seen as inherently comprising "dimensional component values" and therefore does not see the differences between adding the dither signal to the analog signal of Lusignan versus the "dimensional component value of each data point" of Applicants' claims as brought out by the current claim language. The Examiner additionally states that the digitized input signal of Holcomb is subsampled from four samples to produce dithered samples which is clearly a "lower resolution" waveform as opposed to the input signal, so Holcomb produces a lower resolution rasterized waveform for display. Applicants respectfully traverse these improper and nonobvious conclusions by the Examiner having the benefit of hindsight.

Applicants submit that the Examiner is in error in comparing the dithering of Lusignan which increases the accuracy of the measurement of an analog signal at low levels (below the resolution level of the A/D converter) by creating more samples of the signal (adding to the signal a dither signal uncorrelated to the analog signal being measured), with the shaped dither signal claimed by Applicants which is used to convert a high resolution rasterized waveform to a lower resolution rasterized waveform without aliasing artifacts, i.e., comparing improved measurement accuracy with image alias rejection. The dithering provided by Applicant deals with artifacts that result with the truncation of a high resolution image or display to produce a

lower resolution image or display. When an analog signal is sampled during data acquisition, the signal is sampled each sample clock cycle, digitized and stored in time sequential locations in a memory for later display. The data acquisition taught by Lusignan uses dithering to produce a higher resolution image for lower current levels of the signal. Therefore Lusignan teaches dithering to produce higher resolution images, not for eliminating aliasing artifacts when the high resolution image is subsequently converted or truncated to produce a lower resolution image of the measured waveform. Further Applicants submit that Lusignan does not teach or suggest that the dither signal is a "shaped dither signal", i.e., represents a probability density function for the impulse response of the apparatus being implemented. Therefore Lusignan only adds the dither signal to the analog signal prior to it having any dimensional components. Applicants recite that the shaped dither signal is added with a dimensional component value – X or Y component – to each data point for the high resolution rasterized waveform. The purpose of Lusignan is to provide more accurate measurements at low levels to produce a higher resolution image, whereas the present invention produces a better image when the high resolution image is converted to a lower resolution image. This aliasing due to down conversion is not a problem addressed or considered by Lusignan. Applicants add the shaped dither signal after the signal has been digitized and rasterized, whereas Lusignan adds the dither signal prior to digitization and rasterization. The effect on the displayed image is completely different. In order to obtain a lower resolution image from the high resolution image produced by Lusignan's dithering of the analog signal, Applicants' claimed invention would have to be used to provide the necessary image alias rejection by further dithering the high resolution data produced by Lusignan with the shaped dithering signal recited by Applicants.

Therefore Applicants submit that Lusignan does not produce a shaped dither signal, representing a probability density function; and that Lusignan would have the same image aliasing problem as in the prior art when subsampled to produce a lower resolution image. Thus Lusignan neither teaches nor suggests using a shaped dither signal summed with a dimensional component value of each data point for a high resolution rasterized waveform to produce filtered data point values that are subsequently subsampled to produce a lower resolution rasterized

waveform for display that results in image alias rejection. Applicants submit that claims 1 and 4 are allowable as being nonobvious to one of ordinary skill in the art over Lusignan in view of Holcomb.

Claims 2 and 3, which depend from claim 1 which is deemed to be allowable, also are deemed to be allowable as reciting additional substantial limitations. Thus claims 2 and 3 are allowable as being nonobvious to one of ordinary skill in the art over Lusignan in view of Holcomb and further in view of Ward or Dick.

In view of the foregoing remarks allowance of claims 1-4 is urged, and such action and the issuance of this case are requested.

Respectfully submitted,
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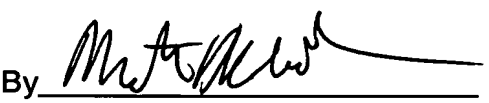
By 

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